1. **GENERAL COMMANDS:**

.open scores.db

.output results.txt

.headers on

.mode column

1. **COMMANDS FOR QUESTIONS 1-8:**

-- 1.) Output a list of students born between June 16, 1991 and Sep. 15, 1996

SELECT s.ID, s.name FROM Students as s

WHERE s.dob >= "1991-06-16"

AND s.dob <= "1996-09-15";

.print \t

--2.)Output the number of students born between June 16, 1991 and September 15, 1996

SELECT count(s.ID) FROM Students as s

WHERE s.dob > "1991-06-16"

AND s.dob < "1996-09-15";

.print \t

--3.)Output a list of students who have missed one or more labs (Score <= 0.1 to avoid numeric truncation errors)

SELECT DISTINCT s.name FROM Students as s,Types as t, Assignments as a, Scores as sc

WHERE sc.score<=0.1

AND sc.studentID=s.ID

AND sc.AssignmentID=a.ID

AND a.typeID=t.typeID

AND t.name="Labs";

.print \t

--4.)Output the name of the student with the best score at the final

SELECT s.name FROM (

SELECT MAX(sc.score) AS maxsc FROM Types as t, Assignments as a, Scores as sc

WHERE sc.AssignmentID=a.ID

AND a.typeID=t.typeID

AND t.name="Final"

) as ma,

Students as s,Types as t, Assignments as a, Scores as sc WHERE sc.score=ma.maxsc

AND sc.studentID=s.ID

AND sc.AssignmentID=a.ID

AND a.typeID=t.typeID

AND t.name="Final";

.print \t

--5.)Output the name of the student closest to the average score of midterm 1

--create a view for the avaerage score

DROP VIEW IF EXISTS average;

CREATE VIEW average AS

SELECT avg(sc.score) as avgscore

FROM Assignments as a, Scores as sc

WHERE sc.AssignmentID=a.ID AND a.name Like "%Midterm 1%";

--creat a view for the minumum difference between score and the average

DROP VIEW IF EXISTS minimum;

CREATE VIEW minimum AS

SELECT min(abs(sc.score - av.avgscore)) AS mindiff

FROM average as av, Assignments as a, Scores as sc

WHERE sc.AssignmentID=a.ID

AND a.name Like "%Midterm 1%";

SELECT s.name, sc.score

FROM minimum as mn, average as av, Students as s, Assignments as a, Scores as sc

WHERE abs(abs(sc.score-av.avgscore)-mn.mindiff)<=0.0001

AND sc.studentID=s.ID

AND sc.AssignmentID=a.ID

AND a.name Like "%Midterm 1%";

.print \n

--6.)Output the accumulated homework score (sum of all assignment-type score) for the students identified in 4. and 5., respectively.

--6.1) for 4.

DROP VIEW IF EXISTS fourthans;

CREATE VIEW fourthans AS

SELECT s.name as fname FROM (

SELECT MAX(sc.score) AS maxsc FROM Types as t, Assignments as a, Scores as sc

WHERE sc.AssignmentID=a.ID

AND a.typeID=t.typeID

AND t.name="Final"

) as ma,

Students as s,Types as t, Assignments as a, Scores as sc WHERE sc.score=ma.maxsc

AND sc.studentID=s.ID

AND sc.AssignmentID=a.ID

AND a.typeID=t.typeID

AND t.name="Final";

SELECT s.name, SUM(sc.score)

FROM Students as s,Types as t, Assignments as a, Scores as sc, fourthans as four

WHERE sc.studentID=s.ID

AND sc.AssignmentID=a.ID

AND a.typeID=t.typeID

AND t.name="Assignment"

AND s.name=four.fname;

.print \n

--6.2) for 5.

SELECT s.name, SUM(sc.score)

FROM Students as s,Types as t, Assignments as a, Scores as sc

WHERE sc.studentID=s.ID

AND sc.AssignmentID=a.ID

AND a.typeID=t.typeID

AND t.name="Assignment"

AND s.name="F4274"

;

SELECT s.name, SUM(sc.score)

FROM Students as s,Types as t, Assignments as a, Scores as sc

WHERE sc.studentID=s.ID

AND sc.AssignmentID=a.ID

AND a.typeID=t.typeID

AND t.name="Assignment"

AND s.name="F4296";

SELECT s.name, SUM(sc.score)

FROM Students as s,Types as t, Assignments as a, Scores as sc

WHERE sc.studentID=s.ID

AND sc.AssignmentID=a.ID

AND a.typeID=t.typeID

AND t.name="Assignment"

AND s.name="F42C0";

.print \t

--7.)Create a VIEW named altAssignments, listing Assignment.ID, Assignment.name, Type.name, and sorted by Type.name.

DROP VIEW IF EXISTS altAssignments;

CREATE VIEW altAssignments AS SELECT a.ID, a.name, t.name AS typeName FROM Types as t, Assignments as a WHERE a.typeID=t.typeID ORDER BY t.name;

SELECT \* FROM altAssignments;

.print \t

.schema altAssignments

.print \t

--8.)Create a series of INSERT statements that create a user entry for yourself, full score on all homeworks, 80% on Midterm 1, 90% on Midterm 2, and 99% on the Final. Show all the newly added information through SELECT statements on the respective tables (make sure to design those SELECT statements to filter only those showing data for your record)

--insert into the table students my student information

INSERT INTO Students(ID, Name, DOB)

VALUES(1568037, "Changming Feng", "1990-10-07");

--insert into table scores scores

INSERT INTO Scores( itemID, AssignmentID, StudentID, Score)

VALUES(

(SELECT MAX(itemID)+1 FROM Scores),

(SELECT a.ID FROM Assignments as a WHERE a.name LIKE "%Assignment #1%"),

1568037,

(SELECT a.targetScore FROM Assignments as a WHERE a.name LIKE "%Assignment #1%"));

INSERT INTO Scores( itemID, AssignmentID, StudentID, Score)

VALUES(

(SELECT MAX(itemID)+1 FROM Scores),

(SELECT a.ID FROM Assignments as a WHERE a.name LIKE "%Assignment #2%"),

1568037,

(SELECT a.targetScore FROM Assignments as a WHERE a.name LIKE "%Assignment #2%"));

INSERT INTO Scores( itemID, AssignmentID, StudentID, Score)

VALUES(

(SELECT MAX(itemID)+1 FROM Scores),

(SELECT a.ID FROM Assignments as a WHERE a.name LIKE "%Assignment #3%"),

1568037,

(SELECT a.targetScore FROM Assignments as a WHERE a.name LIKE "%Assignment #3%"));

INSERT INTO Scores( itemID, AssignmentID, StudentID, Score)

VALUES(

(SELECT MAX(itemID)+1 FROM Scores),

(SELECT a.ID FROM Assignments as a WHERE a.name LIKE "%Assignment #4%"),

1568037,

(SELECT a.targetScore FROM Assignments as a WHERE a.name LIKE "%Assignment #4%"));

INSERT INTO Scores( itemID, AssignmentID, StudentID, Score)

VALUES(

(SELECT MAX(itemID)+1 FROM Scores),

(SELECT a.ID FROM Assignments as a WHERE a.name LIKE "%Assignment #5 - Quick %"),

1568037,

(SELECT a.targetScore FROM Assignments as a WHERE a.name LIKE "%Assignment #5 - Quick %"));

INSERT INTO Scores( itemID, AssignmentID, StudentID, Score)

VALUES(

(SELECT MAX(itemID)+1 FROM Scores),

(SELECT a.ID FROM Assignments as a WHERE a.name LIKE "%Assignment #5 - Problem%"),

1568037,

(SELECT a.targetScore FROM Assignments as a WHERE a.name LIKE "%Assignment #5 - Problem%"));

INSERT INTO Scores( itemID, AssignmentID, StudentID, Score)

VALUES(

(SELECT MAX(itemID)+1 FROM Scores),

(SELECT a.ID FROM Assignments as a WHERE a.name LIKE "%Assignment #6%"),

1568037,

(SELECT a.targetScore FROM Assignments as a WHERE a.name LIKE "%Assignment #6%"));

INSERT INTO Scores( itemID, AssignmentID, StudentID, Score)

VALUES(

(SELECT MAX(itemID)+1 FROM Scores),

(SELECT a.ID FROM Assignments as a WHERE a.name LIKE "%Assignment #7%"),

1568037,

(SELECT a.targetScore FROM Assignments as a WHERE a.name LIKE "%Assignment #7%"));

INSERT INTO Scores( itemID, AssignmentID, StudentID, Score)

VALUES(

(SELECT MAX(itemID)+1 FROM Scores),

(SELECT a.ID FROM Assignments as a WHERE a.name LIKE "%Assignment #8%"),

1568037,

(SELECT a.targetScore FROM Assignments as a WHERE a.name LIKE "%Assignment #8%"));

INSERT INTO Scores( itemID, AssignmentID, StudentID, Score)

VALUES(

(SELECT MAX(itemID)+1 FROM Scores),

(SELECT a.ID FROM Assignments as a WHERE a.name LIKE "%Midterm 1%"),

1568037,

(SELECT (0.8)\*(a.targetScore) FROM Assignments as a WHERE a.name LIKE "%Midterm 1%"));

INSERT INTO Scores( itemID, AssignmentID, StudentID, Score)

VALUES(

(SELECT MAX(itemID)+1 FROM Scores),

(SELECT a.ID FROM Assignments as a WHERE a.name LIKE "%Midterm 2%"),

1568037,

(SELECT (0.9)\*(a.targetScore) FROM Assignments as a WHERE a.name LIKE "%Midterm 2%"));

INSERT INTO Scores( itemID, AssignmentID, StudentID, Score)

VALUES(

(SELECT MAX(itemID)+1 FROM Scores),

(SELECT a.ID FROM Assignments as a WHERE a.name LIKE "%Final%"),

1568037,

(SELECT (0.99)\*(a.targetScore) FROM Assignments as a WHERE a.name LIKE "%Final%"));

SELECT \* FROM Students WHERE ID="1568037";

.print \n

SELECT \* FROM Scores WHERE studentID="1568037";

.print \t

1. **OUTPUTS & EXPLANATION FOR QUESTIONS 1-8:**

1).

ID name

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1000002 F4242

1000003 F4243

1000008 F4248

1000011 F424B

1000015 F424F

1000018 F4252

1000021 F4255

1000026 F425A

1000027 F425B

1000029 F425D

1000031 F425F

1000036 F4264

1000043 F426B

1000046 F426E

1000051 F4273

1000053 F4275

1000066 F4282

1000067 F4283

1000069 F4285

1000071 F4287

1000075 F428B

1000077 F428D

1000079 F428F

1000081 F4291

1000083 F4293

1000084 F4294

1000085 F4295

1000088 F4298

1000094 F429E

1000097 F42A1

1000098 F42A2

1000100 F42A4

1000104 F42A8

1000105 F42A9

1000106 F42AA

1000107 F42AB

1000112 F42B0

1000116 F42B4

1000118 F42B6

1000119 F42B7

1000121 F42B9

1000125 F42BD

1000126 F42BE

1000127 F42BF

1000128 F42C0

1000129 F42C1

1000135 F42C7

1000136 F42C8

1000139 F42CB

1000145 F42D1

1000149 F42D5

1000151 F42D7

1000154 F42DA

1000156 F42DC

1000158 F42DE

1000159 F42DF

1000160 F42E0

1000163 F42E3

1000167 F42E7

1000171 F42EB

1000172 F42EC

1000174 F42EE

1000177 F42F1

1000178 F42F2

1000180 F42F4

1000181 F42F5

1000182 F42F6

1000183 F42F7

1000184 F42F8

1000190 F42FE

1000191 F42FF

1000196 F4304

1000197 F4305

1000198 F4306

1000200 F4308

1000203 F430B

1000210 F4312

1000213 F4315

1000214 F4316

1000216 F4318

1000217 F4319

1000219 F431B

1000220 F431C

1000222 F431E

1000229 F4325

1000234 F432A

1000238 F432E

2).

count(s.ID)

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87

3).

name

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F4251

F4253

F425D

F426A

F4276

F427A

F4280

F4281

F4287

F4291

F429B

F429D

F42AF

F42B5

F42B6

F42C4

F42EC

F4303

F4305

F430B

F4311

F431B

F4324

F4325

4).

name

----------

F42DC

5).

name Score

---------- ----------

F4274 66.0

F4296 66.0

F42C0 66.0

6).

s.name SUM(sc.score)

---------- -------------

F42DC 606.0

name SUM(sc.score)

---------- -------------

F4274 561.0

name SUM(sc.score)

---------- -------------

F4296 606.0

name SUM(sc.score)

---------- -------------

F42C0 606.0

7).

ID name typeName

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1 Homework Assignment #1 (2786783) Assignment

3 Homework Assignment #2 (2786789) Assignment

5 Homework Assignment #3 (2786785) Assignment

7 Homework Assignment #4 (2786784) Assignment

9 Homework Assignment #5 - Quick A Assignment

10 Homework Assignment #5 - Problem Assignment

13 Homework Assignment #6 (2786791) Assignment

15 Homework Assignment #7 (2786790) Assignment

17 Homework Assignment #8 (2786787) Assignment

23 Bonus Assignment #9 (2786795) Assignment

22 Final Exam (2786798) Final

2 Lab #1 (2829219) Labs

4 Lab #2 (2786809) Labs

6 Lab #3 (2786810) Labs

8 Lab #4 (2786811) Labs

11 Lab #5 (2856765) Labs

14 Lab #6 (2786812) Labs

16 Lab #7 (2786813) Labs

19 Lab #8 (2870743) Labs

20 Lab #9 - Beam Lab (2786814) Labs

21 Lab #10 (2786815) Labs

12 Midterm 1 (2786796) Midterm

18 Midterm 2 (2786797) Midterm

CREATE VIEW altAssignments AS SELECT a.ID, a.name, t.name AS typeName FROM Types as t, Assignments as a WHERE a.typeID=t.typeID ORDER BY t.name;

Explanation: The output shows the contents in the VIEW altAssignment as a table and ".schema altAssignment” shows the CREATE statement of the view altAssignments and I can just use this view as a table in “SELECT” and “.schema” command.

8).

ID name DOB

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1568037 Changming Feng 1990-10-07

itemID AssignmentID StudentID Score

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5498 1 1568037 60.0

5499 3 1568037 60.0

5500 5 1568037 70.0

5501 7 1568037 80.0

5502 9 1568037 21.0

5503 10 1568037 50.0

5504 13 1568037 70.0

5505 15 1568037 60.0

5506 17 1568037 60.0

5507 12 1568037 80.0

5508 18 1568037 90.0

5509 22 1568037 99.0